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09/487,868	01/20/2000	Masahiko Kikuzawa	35.C14184	3671

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FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER

ROSENDALE, MATTHEW L

ART UNIT PAPER NUMBER

2612

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/487,868

Applicant(s)

KIKUZAWA, MASAHIKO

Examiner

Matthew L Rosendale

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-11,13-17 is/are rejected.
- 7) ☒ Claim(s) 4 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 12/01/03 regarding claims 1 – 17 have been fully considered but they are not persuasive.

It is pointed out by the examiner that the claims as currently drafted have two alternative interpretations. As to claims 1, 9, and 17, the limitations as currently amended can be interpreted as follows: A noise reduction device that reduces noise added to a sensed image by an internal apparatus factor utilizing time correlation of sensed images where the internal apparatus factor is a noise correction factor that is generated internally by the image sensing apparatus to reduce the noise added to a sensed image. The internal apparatus factor is derived by utilizing time correlation of sensed images.

Therefore the limitation of an internal apparatus factor is still anticipated because Washisu discloses a noise reduction means for reducing noises of a sensed image by utilizing images having a correlation in time. The time correlated images are used to determine an internal apparatus factor used to drive the corrective optical means 16 to eliminate the noise in the current image caused by camera shake (Col. 3, Line 65 – Col. 4, Line 25 and Col. 7, Lines 33 – 59).

The rejection of claims 1 – 3, 5 – 11, and 13 – 17 are maintained.

### ***Claim Rejections - 35 USC § 102***

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3, 5, 6, 9, 11, 13, 14 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Washisu.

Referring to claims 1, 9, and 17, Washisu discloses a computer readable medium storing a method for operating the apparatus comprising a noise reduction device 16 for reducing noises of a sensed image by an internal correction factor utilizing images having a correlation in time, a sample and hold circuit 13 provided for storing a current and previously captured image frame for correlation to determine the amount of noise in the current image caused by camera shake, a zoom control means provided for controlling the zoom magnification factor, a device that determines whether the zoom control means is executing a zoom operation, and a setting device is provided for setting a control value for the noise reduction in accordance with the zoom operation determining device (Col. 3, Line 65 – Col. 4, Line 25 and Col. 7, Lines 33 – 59).

2. Referring to claims 3 and 11, Washisu discloses a setting device that sets a control value for the noise reduction means in accordance with a magnification factor per unit time used by the zoom control means. When the user operates the zoom control and moves the zoom lens to short position decreasing the magnification factor per unit time, the setting means decreases the control value input to the noise control circuit used to drive the correction optical means 16 (Col. 7, Lines 33 – 59).

3. Referring to claims 5 and 13, Washisu discloses a setting means that stepwise changes the control value for the noise reduction means when the zoom operation transfers from an execution state to a stop state. The second gain control value of Washisu is at a normal state when the user is operating the zoom control means, then the gain control value is stepwise reduced from the normal value to a reduced value when the zoom is stopped in the short position (Col. 7, Lines 33 – 59).

4. Referring to claims 6 and 14, the setting means of Washisu is disclosed as reducing the gain control value to the noise control means from a normal value when zoom lens is stopped in the short position. Therefore when the zoom control is executed moving the zoom lens away from the short position, the gain control value would be increased from the reduced value when the zoom lens is in the short position to the normal gain control value when the zoom lens is being operated in positions other than the short position (Col. 7, Lines 33 – 59).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Washisu in view of Kaneda.

Referring to claims 2 and 10, Washisu discloses a noise correcting means that optically removes noise in an object image by reducing image blur due to camera shake. Washisu teaches that the noise correction gain control value is decreased stepwise when the zoom control moves the zoom lens to the short position. Washisu does not provide specific operation details for the zoom control means at various positions between the long and short positions of the zoom lens.

Kaneda provides a teaching regarding the relation between zoom magnification and camera shake. According to Kaneda, as the zoom ratio increases, affects of camera shake also increase (Col. 1, Lines 28 – 45). Therefore, it would have been obvious to one of ordinary skill in the art using the teachings of Kaneda, that if the zoom lens is stopped in the long position where camera shake is highly influential to the image data, the noise control value of Washisu would need to increase to a peak amount to remove shake noise in the image.

In addition, the teachings of Kaneda show a relationship between the affects of shake noise and zoom magnification being that the larger the zoom magnification, the larger the affects of shake noise are on the object image.

Therefore it would have been obvious to one of ordinary skill in the art to use the noise/zoom relationship of Kaneda when calculating the gain control value of Washisu so that the gain control value is at its highest value when the zoom is in the long stopped position where zoom magnification is at its highest and then the setting means of Washisu can set the gain control value of the noise correction means to a lower amount while a zoom is being executed in any position other than the stopped long position.

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6. Claims 7, 8, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Washisu in view of Kyuma.

Referring to claims 7 and 15, Washisu discloses a camera comprising an optical zoom. Washisu does not disclose a camera comprising an optical and electronic zoom. However, Kyuma discloses that it is well known to provide an electronic camera with an optical and electronic zoom. Figure 1 of Kyuma shows a lens system comprising an optical zoom for moving zoom lenses 102 and 104 along the optical axis changing the magnification of the object image. In addition to the optical zoom, an electronic zoom 205 is also provided to further magnify the object image beyond the capabilities of the optical zoom lens.

Therefore it would have been obvious to provide an electronic zoom along with the optical zoom of Washisu so as to provide a means of further magnifying an object image.

7. Referring to claims 8 and 16, Washisu discloses a noise correcting means that optically removes noise in an object image by reducing image blur due to camera shake. Washisu does not disclose a camera comprising an optical and electronic zoom. However, Kyuma discloses that it is well known to provide an electronic camera with an optical and electronic zoom. Figure 1 of Kyuma shows a lens system comprising an optical zoom for moving zoom lenses 102 and 104 along the optical axis changing the magnification of the object image. In addition to the optical zoom, an electronic zoom 205 is also provided to further magnify the object image beyond the capabilities of the optical zoom lens.

Therefore it would have been obvious to provide an electronic zoom along with the optical zoom of Washisu so as to provide a means of further magnifying an object image and

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since Washisu only discloses noise correction in the optical zoom, it would have been obvious to perform the optical noise correction on the object image, then input a noise corrected image to the electronic zoom so that the pixels being enlarged or reduced by the electronic zoom are not corrupted by noise artifacts resulting in a deterioration in overall image quality.

***Allowable Subject Matter***

Claims 4 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Referring to claims 4 and 12, the prior art fails to teach or suggest a setting means that changes the control value for the noise reduction means in accordance with a control value for an exposure control means.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



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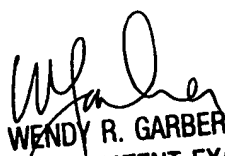
however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew L Rosendale whose telephone number is (703) 305-4909. The examiner can normally be reached on Monday - Friday 8: 00am-4: 00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLR

  
WENDY R. GARBER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600